

New List of Dutch Acari

SECOND PART.

With remarks on known and descriptions of a new subfamily, new genera and species

BY

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(With Plate 1—6.)

1. Additions to my List of Oribatidae.

Since the 12th of February, 1900, on which date I closed my New List of Dutch Acari, 1st Part (appeared Sept., 5, 1900, in Vol. XLIII of this Journal), the following *Oribatidae* have been examined by me, and are additions to my List.

3. *Notaspis orbicularis* (C. L. Koch). — Nijkerk. — K. J. W. Kempers.

4. *Notaspis trimaculata* (C. L. Koch). — Arnhem. — 12.

7. *Notaspis humeralis* Herm. (= *lapidarius* H. Luc.) — Dead in water; on *Fagus sylvatica*. — Doorwerth, Oosterbeek.

9. *Notaspis seminulum* (Panz.) (= *globosus* Nic.).

10. *Notaspis quadricornuta* (Michael). — Nijkerk. — K. J. W. Kempers.

12. *Notaspis elimata* (C. L. Koch). — Nijkerk. — K. J. W. Kempers.

12. a. *Notaspis alata* Herm. — In moss. — Apeldoorn. — 6. —
Faun. nov. sp.

13. *Notaspis lanceata* Oudms. — Haarlem. —

14. a. *Notaspis schützti* Oudms. — In moss. — Rotterdam. —

3. — **Nov. sp. et Faun. nov. sp.** —

25. *Carabodes labyrinthicus* (Michael). — 8. —
 32. *Eremaeus bipilis* (Herm.). — Hilversum. — Dr. de Meijere.
 34. *Eremaeus lucorum* (C. L. Koch). — Dr. J. A. van den Brink.
 45. *Oribata geniculata* (L.). — Nijkerk. — K. J. W. Kempers.
 48. *Hermannia reticulata* Thor, being wrongly determined, falls away. —

59. *Hoplodermas dasypus* (Ant. Dug.). — Hilversum, Rotterdam. — Dr. de Meijere, H. Schütz. —

Nº. 12 a and 14 a being new to our Fauna and 48 falling off, the number of *Oribatidae neerlandicae* amounts to 61 species.

2. *Notaspis schützi* Oudms., nov. sp.

(With Plate 1, fig. 1).

This new species, sent to me in 3 specimens by Mr. H. Schütz, of Rotterdam, and found by him in moss, is closely allied to *Notaspis cuspidata* (Michael) and *N. lucasi* (Nic.).

The claws are tridactyl, heterodactyl; the middle one stronger than the lateral ones. There is not any trace of translamella. The lamellae are normal. The pteromorphae are truncated anteriorly and do not project beyond the anterior margin of the abdomen. This is quite hairless, and the demarcation between it and the cephalothorax is plain, very distinct. The lamellar and interlamellar hairs are simple, setiform, directed forward. The lamellae much shorter than the rostrum. The pseudostigmatic organ is short, clavate, blunt anteriorly. The pseudostigma is conspicuous, cup-shaped. The legs resemble those of *N. avenifera* (Michael), and *N. cuspidata* (Michael), being short. — Length 400 μ .

3. Emendation of the key to the species of *Notaspis* Herm.

(Vide p. 14 of Das Tierreich, Oribatidae).

38. { Psstg. org. short, clavate, directed
 forward. — 38a
 Psstg. org. long, with slender peduncle and fusiform head, recurved. *N. lucasi* (Nic.)

- 38a. { Psstg. org. pointed anteriorly . . . *N. cuspidata* (Michael).
 { Psstg. org. blunt anteriorly . . . *N. schützi* Oudms.

4. Emendations of my (first) list of Parasitidae (Gamasidae).

(Published in this Journal, v. 39, p. 53 sqq.).

The following names of *Acari* must be changed, partly because the species were not or wrongly determinated, partly for other reasons.

1. *Parasitus* sp. = *Cyrtolaelaps nemorensis* (C. L. Koch).
2. *Parasitus* sp. = *Cyrtolaelaps nemorensis* (C. L. Koch).
3. *Parasitus* sp. = *Cyrtolaelaps nemorensis* (C. L. Koch).
4. *Parasitus* sp. = *Parasitus cornutus* (G. et R. Can.).
5. *Parasitus* sp. = *Parasitus crassipes* (L.)
6. *Parasitus* sp. = *Macrocheles marginatus* (Herm.)
7. *Parasitus* sp. = *Parasitus cornutus* (G. et R. Can.).
8. *Parasitus* sp. = *Parasitus septentrionalis* Oudms., nov. sp.
9. *Parasitus* sp. = *Parasitus septentrionalis* Oudms.
10. *Parasitus* sp. = *Parasitus coleopratorum* (L.)
11. *Parasitus* sp. = *Parasitus magnus* (Kram.)
12. *Parasitus* sp. = *Parasitus dentipes* (C. L. Koch).
13. *Parasitus* sp. = *Cyrtolaelaps transisulae* Oudms., nov. sp.
14. *Parasitus* sp. = *Parasitus coleopratorum* (L.).
15. *Parasitus* sp. = *Pachylaelaps furcifer* Oudms. nov. sp.
16. *Parasitus* sp. = *Parasitus emarginatus* (C. L. Koch).
17. *Parasitus badius* Koch = *Macrocheles longispinosus* (Kram.).
18. *Parasitus calcaratus* Koch = *Parasitus calcaratus* (C. L. Koch).
19. *Parasitus cervus* Kram. = *Cyrtolaelaps cervus* (Kram.).
20. *Parasitus coleopratorum* (L.) = *Parasitus coleopratorum* (L.).
21. *Parasitus crassipes* L. = *Parasitus crassipes* (L.).
22. *Parasitus hamatus* Koch = *Parasitus meridionalis* (Berl.).
23. *Parasitus limbatus* Koch = *Hypoaspis arcualis* (C. L. Koch).
24. *Parasitus monachus* Koch = *Parasitus crassipes* (L.).
25. *Parasitus musculi* Koch = *Iiponyssus albatu*s (C. L. Koch).

26. *Parasitus nemorensis* Koch = *Cyrtolaelaps nemorensis* (C. L. Koch).
27. *Parasitus petiolatus* Koch = *Parasitus longulus* (C. L. Koch).
28. *Parasitus tardus* Koch = *Macrocheles tridentinus* (G. et R. Can.).
29. *Parasitus triangulatus* Koch = *Asca peltata* (C. L. Koch).
30. *Parasitus vepallidus* Koch = *Seiulus vepallidus* (C. L. Koch).
31. *Uropoda* sp. = *Uropoda tecta* Kram.
32. *Uropoda* sp. = *Uropoda campomolendina* Berl.
33. *Uropoda* sp. = *Cillibaena minor* (Berl.).
34. *Uropoda* sp. = *Uropoda obscura* (C. L. Koch).
35. *Uropoda cassideus* Herm. = *Cillibaena cassideus* (Herm.).
36. *Uropoda elongata* = *Uroseius vegetans* (J. Müller).
37. *Uropoda scutulata* Mégn. = *Uropoda tecta* Kram.
38. *Uropoda truncata* Mégn. = *Cillibaena minor* (Berl.).
39. *Uropoda vegetans* de Geer = *Cillibaena vegetans* (Ant. Dug.).
40. *Emeus* sp. = *Emeus halleri* (G. et R. Can.).
41. *Emeus* sp. = *Hypoaspis arcualis* (C. L. Koch).
42. *Emeus* sp. = *Emeus ostrinus* (C. L. Koch).
43. *Laelaps* sp. = *Neopodocinum jaspersi* Oudms., **nov. gen., nov. sp.**
44. *Laelaps* sp. = *Hypoaspis arcualis* (C. L. Koch).
45. *Laelaps* sp. = *Parasitus coleopratorum* (L.)
46. *Laelaps* sp. = *Parasitus magnus* (Kram.).
47. *Laelaps* sp. = *Parasitus fucorum* (de Geer).
48. *Laelaps* sp. = *Macrocheles marginatus* (Herm.).
49. *Laelaps* sp. = *Hypoaspis krameri* G. et R. Can.
50. *Laelaps* sp. = *Hypoaspis aculeifer* (G. Can.)
51. *Laelaps* sp. = *Hypoaspis celeripediformis* Oudms., **nov. sp.**
52. *Laelaps* sp. = *Macrocheles marginatus* (Herm.)
53. *Laelaps* sp. = *Hypoaspis pavidus* (C. L. Koch).
54. *Laelaps* sp. = *Hypoaspis aculeifer* (G. Can.)
55. *Laelaps crassipes* Schrank = *Laelaps agilis* C. L. Koch.
56. *Laelaps lemni* Grube = *Hypoaspis arcualis* (C. L. Koch).
57. *Laelaps pectinifer* Berl. = *Pachylaelaps furcifer* Oudms. **nov. sp.**
58. *Zercon* sp. = *Asca affinis* Oudms., **nov. sp.**
59. *Zercon* sp. = *Emeus halleri* (G. et R. Can.).
60. *Zercon pavidus* Koch = *Hypoaspis pavidus* (C. L. Koch).

61. (*Celaeno*) sp. = *Caeleno aegrota* (C. L. Koch).
62. (*Celaeno*) *aegrota* Koch = *Caeleno aegrota* (C. L. Koch).
63. *Epicrius* sp. = *Epicrius reticulatus* (Grube).
64. *Cryptognathus*, is a Thrombidid, not a Gamasid.
65. *Smaridia* sp. = *Liponyssus musculi* (C. L. Koch).
66. *Smaridia* sp. = *Liponyssus musculi* (C. L. Koch).
67. *Smaridia* sp. = *Liponyssus corethroproctus* Oudms., nov. sp.
68. *Smaridia* sp. = *Liponyssus corethroproctus* Oudms.
69. *Smaridia* sp. = *Liponyssus albatu*s (C. L. Koch).
70. *Smaridia* sp. = *Liponyssus albatu*s (C. L. Koch).
71. *Smaridia carduelis* Schrank (*avium* Dug.) = *Ptilonyssus nudus* Berl. et Trt.
72. *Smaridia gallinae* de Geer = *Dermanyssus gallinae* (de Geer).
73. *Smaridia hirundinis* Herm. = *Ptilonyssus nudus* Berl. et Trt.
74. *Ichoronyssus decussatus* Kol. = *Liponyssus albatu*s (C. L. Koch).
75. *Celeripes* sp. = *Spinturnix vespertilionis* (L.)
76. *Celeripes* sp. = *Liponyssus musculi* (C. L. Koch).
77. *Celeripes* sp. = *Spinturnix vespertilionis* (L.)
78. *Celeripes* sp. = *Spinturnix vespertilionis* (L.)
79. *Celeripes vespertilionis* Scop. = *Spinturnix vespertilionis* (L.)
80. *Diplostaspis vespertilionis* Gerv. (*Nilssonii* Kol.) = *Spinturnix vespertilionis* (L.)
81. Gen.? sp.? = *Rhodacarus roseus* Oudms., nov. gen., nov. sp.

Consequently 46 instead of 81 species.

Since May 1896 I have collected several of the above mentioned species both of the same and other localities, and a few species new to our Fauna. Some members of our Society too have kindly procured me some Acari, which they accidentally met with in searching for other insects. My sincere thanks may reach them in this way!

5. New List of Parasitidae neerlandicae.

DERMANYSSINAE.

1. *Dermanyssus gallinae* (de Geer). — On *Gallina gallus* L. — Nijkerk, Utrecht, Amsterdam, Loosduinen — 5, 11. — Dr. van Hasselt, K. J. W. Kempers, P. Koorevaar.

2. *Liponyssus musculi* (C. L. Koch). — On *Vespertilio dasycneme*; *Vespertilio nattereri*, *Vesperugo pipistrellus*, *Mus rattus*. — Sneek, Arnhem, Lunteren. — 7, 9, 10.—

3. *Liponyssus saurorum* Oudms., **nov. sp.** — On *Lacerta agilis*.— Rotterdam. — 1, 6, 12. — H. Schütz.

4. *Liponyssus corethroproctus* Oudms., **nov. sp.** — On *Vespertilio dasycneme*. — Sneek. — 7.

5. *Liponyssus albatrus* (C. L. Koch) — On *Vesperugo serotinus*, *Vespertilio dasycneme*, *Vespertilio murinus*, *Vesperugo noctula*, *Talpa europaea*, *Mus musculus*, *Mus rattus*, *Paludicola amphibius*, *Putorius erminea*. — Sneek, Arnhem, Utrecht, Leiden, Haag. — 1, 2, 4, 8, 10, 12. —

SPINTURNICINAE.

6. *Spinturnix vespertilionis* (L.) — On *Vespertilio murinus*, *Vespertilio dasycneme*, *Vesperugo noctula*, *Plecotus auritus*, *Synotis barbastellus*, *Rhinolophus hipposideros*. — Sneek, Utrecht, Haag, Amsterdam, Maastricht. — 2, 4, 5, 7, 8. — Dr. Everts, J. de Kruyff, H. Koller.

7. *Ptilonyssus nudus* Berl. et Trt. — On *Passer domesticus*, *Chrysomitris spinus*, *Parus major*, *Sturnus vulgaris*, *Dryospiza canaria*, *Hirundo rustica*. — Utrecht, Amsterdam. 2—5, 10, 11.— P. Koorevaar.

LAELAPTINAE.

8. *Sciurus plumosus* Oudms, **nov. sp.** — On *Vespertilio dasycneme*, *Sciurus vulgaris*. — Sneek, Arnhem. — 7, 10.

9. *Sciurus vepullidus* (C. L. Koch). — On *Ulmus campestris*, *Ulmus montanus*, *Viburnum lantana*, *Crataegus monogyna*, *Tilia platyphyllos*, *Quercus pedunculata*; in lichen; in decaying leaves;

on plums. — Sneek, Utrecht, Arnhem, Bloemendaal, Bergen-op-Zoom. — 1, 5—8.

10. *Seiulus muricatus* (C. L. Koch). — In tuber of *Solanum tuberosum*. — Arnhem, Nijkerk. — K. J. W. Kempers.

11. *Emeus ostrinus* (C. L. Koch). — In decaying leaves; in a decaying hyacinth-bulb. — Lochem, Utrecht. — 5, 8. —

12. *Emeus halleri* (G. et R. Can.) — In humus; in decaying leaves; on *Geotrupes stercorarius*, *Necrophorus germanicus*, *Staphylinus maxillosus*, *Musca domestica*. — Brummen, Arnhem, Nijkerk, Utrecht, Haarlem, Haag. — 4—8. — K. J. W. Kempers, Dr. Everts.

13. *Laelaps agilis* C. L. Koch. — On *Arvicula arvalis*, *Paludicola amphibius*, *Mustela vulgaris*, *Putorius erminea*. — Sneek, Arnhem, Haag. — 3—7, 10.

14. *Hypoaspis placentula* Berl. — Nijkerk. — K. J. W. Kempers.

15. *Hypoaspis myrmecophilus* Berl. — In nest of *Formica sanguinea* Latr. and *Formica rufa* F. — Exaeten. — E. Wasmann.

16. *Hypoaspis arcuata* C. L. Koch. — On *Talpa europaea*, *Arvicola arvalis*, *Mustela vulgaris*, *Putorius putorius*, *Mus sylvaticus*, in decaying leaves. — Lochem, Utrecht, Amsterdam, Haarlem, Wassenaar, Haag. — J. Jaspers Jr. — 7—9. —

17. *Hypoaspis ovalis* Mon. — In nests of *Formica sanguinea* Latr. — Exaeten. — E. Wasmann.

18. *Hypoaspis cuneifer* Michael. — In nests of *Formica sanguinea* and of *Lasius fuliginosus* Latr. — Exaeten. — E. Wasmann.

19. *Hypoaspis pavidus* (C. L. Koch.) — In moss; in decaying leaves. — Langweer, Haarlem, Overveen. — 6—8. —

20. *Hypoaspis aculeifer* G. Can. — On a decaying hyacinth-bulb; on a sunny dike. — Utrecht. — 5, 7. —

21. *Hypoaspis cossi* (Ant. Dug.). — On a caterpillar of *Trypanus cossus*; on ditto of *Saesia formicaeformis*; on *Lacerta agilis*. — A. A. van Pelt Lechner; Dr. J. Th. Oudemans. — 5, 11. —

22. *Hypoaspis hypudaei* Oudms., nov. sp. — On *Paludicola amphibius*. — Sneek. — 4.

23. *Hypoaspis oophilus* Wasmann. — In nest of *Formica sanguinea* Latr. — Exaeten. — E. Wasmann.

24. *Hypoaspis krameri* G. et R. Can. — On *Oryctes nasicornis*. — Utrecht. — 8.

25. *Hypoaspis celeripediformis* Oudms., nov. sp. — On *Putorius ermineus*. — Sneek. — 6.

26. *Neopodocinum jaspersi* Oudms., nov. gen., nov. sp. — Amsterdam. — J. Jaspers, Jr.

ANTENNOPHORINAE.

Not yet found.

CELAENOPSINAE.

Not yet found.

PARASITINAE.

27. *Cyrtolaelaps nemorensis* (C. L. Koch). — In decaying leaves; in moss; on *Paludicola amphibius*. — Sneek, Delden, Lochem, Ruurloo, Warnsveld, Brummen, Hilversum, Amsterdam, Haarlem. — 1, 4, 5, 7, 8. — Dr. de Meijere.

28. *Cyrtolaelaps transisalae* Oudms., nov. sp. — In decaying leaves. — Delden. — 4.

29. *Cyrtolaelaps cervus* (Kram.). — In decaying leaves; in moss. — Langweer, Delden, Lochem, Ruurloo, Warnsveld, Brummen, Steeg, Haarlem, Overveen. — 4—8. —

30. *Cyrtolaelaps bisetus* Berl. — In decaying tuber of *Crocus vernus*. — Haarlem. — 1.

31. *Eurytelaps terribilis* (Michael) nov. gen. — Loosduinen, Haag. — 4. — Dr. Everts. —

32. *Parasitus sexclavatus* Oudms., nov. sp. — On *Ocypus olens*. — Nijkerk, Haarlem. — 8. — K. J. W. Kempers. —

33. *Parasitus fucorum* (de Geer). — On a dead *Lumbricus terrestris*; on a sunny dike; on living plants; in moss; in horse dung; on *Bombus terrestris*, *Bombus hortorum*, *Psithyrus vestalis*, *Necrophorus germanicus*, *Necrophorus vespillo*, *Aphodius fossor*. — Leeuwarden, Sneek, Apeldoorn, Arnhem, Nijkerk, Utrecht, Haarlem, Haag, Bergen-op-Zoom. — 4—9. — J. A. van den Brink; K. J. W. Kempers; Dr. Everts. —

34. *Parasitus subterraneus* (J. Müller). — On *Necrophorus vespillo*, *Necrophorus germanicus*. — Sneek, Arnhem. — 5.

35. *Parasitus emarginatus* (C. L. Koch). — On *Tulpa europaea*. — Sneek. — 5.

36. *Parasitus vespillonum* Oudms., nov. sp. — On *Necrophorus vespillo*. — Arnhem. — 3.

37. *Parasitus bomborum* Oudms., nov. sp. — On a sunny dike; on *Bombus terrestris*. — Utrecht, Amsterdam. — 8. — W. J. Klaassen. —

38. *Parasitus magnus* Kram. — In decaying leaves; in humus. — Sneek, Zutphen, Nijkerk, Hilversum, Watergraafsmeer, Haarlem, Overveen, Haag. — 5, 7, 8. — Dr. Everts; Dr. de Meijere.

39. *Parasitus cornutus* (G. et R. Can.). — In decaying leaves; in moss; in humus. — Sneek, Delden, Lochem, Zutphen, Warnsveld, Brummen, Steeg, Nijkerk, Hilversum, Haarlem, Overveen, Amsterdam. — 1—12. — K. J. W. Kempers; Dr. de Meijere.

40. *Parasitus kempersi* Oudms., nov. sp. — Nijkerk — K. J. W. Kempers.

41. *Parasitus coleopratorum* (L.). — In dusty localities in houses; in horse dung; on a dead *Lumbricus terrestris*; in decaying leaves; on living plants; on a sunny dike; on *Bombus muscorum*, *Bombus hortorum*, *Psithyrus vestalis*, *Psychoda nervosa*, *Geotrupes stercorarius*, *Aphodius fossor*, *Necrophorus vespillo*, *Necrophorus germanicus*, *Ocyptus olens*, *Emus hirtus*, *Paludicola amphibius*, *Putorius putorius*, *Putorius furo*. — Leeuwarden, Sneek, Delden, Lochem, Warnsveld, Arnhem, Nijkerk, Utrecht, Hilversum, Amsterdam, Haarlem, Bloemendaal, Nootdorp, Leiden, Haag — 4—9. — J. A. van den Brink; Dr. Everts; Dr. de Graaf; J. Jaspers, Jr.; K. J. W. Kempers; Dr. de Meijere.

42. *Parasitus mustelarum* Oudms., nov. sp. — On *Putorius putorius* and *P. furo*. — Haag. — 6.

43. *Parasitus longulus* (C. L. Koch), var. *minor*. Berl. — In decaying leaves. — Hilversum. — Dr. de Meijere. — 8. —

43a. *Parasitus longulus* (C. L. Koch). — In decaying leaves, in moss. — Sneek, Delden, Lochem, Ruurloo, Warnsveld, Brummen, Steeg, Apeldoorn, Nijkerk, Hilversum, Haarlem, Overveen,

Bloemendaal, Haag, Bergen-op-Zoom. — 4—9. — K. J. W. Kempers; Dr. de Meijere.

43b. *Parasitus longulus* (C. L. Koch), var. *robustus* Oudms., **nov. var.** — In decaying leaves. — Haarlem, Bloemendaal, Bergen-op-Zoom — 5, 7, 8. —

44. *Parasitus dentipes* (C. L. Koch). — In decaying leaves; in humus. — Sneek, Haarlem, Bergen-op-Zoom. — 5, 7.

45. *Parasitus calcaratus* (C. L. Koch). — In decaying leaves; in moss. — Sneek, Lochem, Warnsveld, Steeg, Nijkerk, Haarlem, Overveen, Bloemendaal, Haag, Bergen-op-Zoom. — 5, 7, 8. — Dr. Everts, K. J. W. Kempers

46. *Parasitus wasmanni* Oudms., **nov. sp.** — In nest of *Formica sanguinea* Latr. — Exaeten. — E Wasmann.

47. *Parasitus crassipes* (L.) — In dusty localities in houses; on a dead *Lumbricus terrestris*; in decaying leaves; in humus; on a sunny dike; in moss; on a wooden pile of see-work; on *Bombus muscorum*, *Paludicola amphibius*. — Termunten, Langweer, Sneek, Lochem, Ruurloo, Warnsveld, Brummen, Steeg, Winterswijk, Arnhem, Nijkerk, Wageningen, Utrecht, Hilversum, Haarlem, Overveen, Haag, Loosduinen, Bergen-op-Zoom. — 1, 4—9. — Dr. Everts; K. J. W. Kempers; J. A. van den Brink; Dr. de Meijere. —

48. *Parasitus septentrionalis* Oudms., **nov. sp.** — In decaying leaves; in moss. — Warnsveld, Haarlem, Overveen, Haag. — 5, 7, 8. —

49. *Parasitus meridionalis* (Berl.). — In decaying leaves. — Lochem, Haag, Haarlem. — 5, 8.

50. *Haemogamasus hirsutus* Berl. — On *Talpa europaea*. — Arnhem. — 3.

51. *Macrocheles longulus* Berl. — In decaying leaves. — Delden, Lochem, Ruurloo, Brummen, Warnsveld, Steeg, Haarlem, Overveen, Haag. — 4—8.

52. *Macrocheles longispinosus* (Kram.). — In decaying leaves — Sneek, Delden, Lochem, Ruurloo, Warnsveld, Brummen, Steeg, Haarlem, Overveen. — 4—8. —

53. *Macrocheles marginatus* (Herm.). — In decaying leaves; in decaying hyacinth-bulb; in moss; on a dead *Lumbricus terrestris*; on *Ocypus olens*, *Staphilinus marillosus*, *Geotrupes stercorarius*, *Aphodius fossor*, *Necrophorus vespillo*, *Necrophorus germanicus*, *Stomoxys calcitrans*, *Vespertilio dasycneme*, *Putorius putorius*, *Putorius furo*. — Sneek, Delden, Warnsveld, Brummen, Lochem, Ruurloo, Steeg, Arnhem, Nijkerk, Utrecht, Amsterdam, Haarlem, Overveen, Leiden, Nootdorp, Haag. — 3—10. — Dr. de Graaf; K. J. W. Kempers; Dr. Everts; Dr. de Meijere; Mr. van den Brink.

54. *Macrocheles pisentii* (Berl.). — On *Ocypus olens* — Haarlem, Nijkerk. — 3. — K. J. W. Kempers.

55. *Macrocheles terreus* (Can. et Fanz.). — In decaying leaves. — Lochem, Ruurloo, Brummen, Delden, Warnsveld, Steeg, Nijkerk, Haarlem, Overveen, Haag. — 5—8. — K. J. W. Kempers.

56. *Macrocheles tridentinus* (G. et R. Can.). — In decaying leaves; on *Paludicola amphibius*. — Delden, Lochem, Ruurloo, Brummen, Warnsveld, Steeg, Haarlem, Overveen, Haag. — 4—8.

57. *Macrocheles vagabundus* (Berl.). — In decaying leaves. — Haag. — 8. —

58. *Pachylaelaps furcifer* Oudms., **nov. sp.** — In decaying leaves; on a dead *Lumbricus terrestris*. — Utrecht, Haarlem. — 5—9. — Mr. van den Brink.

59. *Pachylaelaps ensifer* Oudms., **nov. sp.** — Nijkerk. — K. J. W. Kempers. —

EPICRIINAE.

60. *Epicrius reticulatus* (Grube). — In decaying leaves. — Delden, Lochem, Ruurloo. — 4—8.

61. *Epicrius mollis* (Kram.) — In decaying leaves. — Delden. — 4.

62. *Asca peltata* (C. L. Koch). — In decaying leaves; in moss. — Lochem, Warnsveld, Steeg, Hilversum, Bloemendaal. — 4 8 — Dr. de Meijere. —

63. *Asca affinis* Oudms., **nov. sp.** — In humus; on *Mustela vulgaris*, *Putorius putorius*. — Utrecht, Haag. — 5—10.

UROPODINAE.

64. *Uropoda obscura* (C. L. Koch). — In decaying leaves; on

a dead *Lumbricus terrestris*; on *Sitones viridis*. — Utrecht, Leiden, Haag. — 9, 10. — Mr. van den Brink; Dr. Everts. —

65. *Uropoda tecta* Kram. — In decaying leaves; on *Paludicola amphibius*. — Sneek, Delden, Warnsveld, Steeg, Haarlem. — 4—8.

66. *Uropoda ovalis* Kram. — In decaying leaves. — Overveen, Haarlem, Haag. — 4—8.

67. *Uropoda ricasoliana* Berl. — In nests of *Lasius fuliginosus* Latr. — Exaeten. — E. Wasmanu.

68. *Uropoda oophila* Mon. — In nests of *Formica sanguinea* Latr. and *Formica rufibarbis* Fab. — Exaeten. — E. Wasmann.

69. *Uropoda krameri* G. Can. — Nootdorp. — 9. — Dr. Everts.

70. *Uropoda campomolendina* Berl. — On a sunny dike. — Nijkerk, Utrecht. — 7. — K. J. W. Kempers.

71. *Cillibaena vegetans* (Ant. Dug.). — On *Aphodius fossor*, *Aphodius subterraneus*, *Geotrupus stercorarius*, *Ocytus olens*, *Philonthus aeneus*, *Emus hirtus*, *Cucumis sativus*. — Sneek, Arnhem, Nijkerk, Utrecht, Haarlem, Haag. — 3—8. — K. J. W. Kempers; Dr. Everts; C. Botke.

72. *Cillibaena cassideus* (Herm.). — In decaying leaves. — Steeg, Ruurloo, Haarlem. — 7, 8. —

73. *Cillibaena minor* (Berl.). — In decaying leaves; in moss. — Delden, Lochem, Ruurloo, Warnsveld, Steeg, Haarlem, Bloemendaal, Overveen. — 4—8.

74. *Dinychus perforatus* Kram. — In decaying leaves. — Haarlem. — 8.

RHODACARINAE. nov. subfam.

75. *Rhodacarus roseus* Oudms., nov. gen., nov. sp. — In decaying leaves. — Haarlem. — 5, 8.

Consequently 75 in stead of 81 species.

With the 61 species of *Oribatidae*, the number of *Acari neerlandici* amounts to 136 species.

6. *Dermanyssus gallinae* (de Geer).

(With Plate 1, fig. 2 and 3).

My specimens are positively of this species; and yet the ventral side of the *females* does not correspond with the figure of BERLESE (Ac. Myr. Scorp. Ital. fasc. 53, n^o. 1 and n^o. 4), nor with the description: «scutum sternale tantum vitta transversa chitinea significatum» (BERLESE loc. cit. n^o. 4), nor with the passage in the diagnose of the family *Dermanyssidae*: «Inferne in ventre scutum sternale perstrictum in quadam specie conspicitur, inter secundi pares coxas, quasi vitta chitinea extensum. Scutum genitale abest, et vulva rima antierius dermate longitudinaliter striato. . . . inter pedes aperitur».

In my figure 2 it is clearly visible, that behind the so-called sternal shield: «vitta transversa chitinea inter secundi paris coxas», there is a very long space, reaching from this «sternal shield» to nearly the middle of the «venter», which space is totally deprived from the common very fine wrinkles that characterize the soft skin of *Dermanyssus* and allies. In this space, invariable in breadth and length in different specimens, they may be fasting or well-fed, distinctly three parts are visible, viz. 1. an unwrinkled one, rounded anteriorly, concave posteriorly, and which I consider to be the hinder part of the sternal shield, whilst the «vitta transversa chitinea» of BERLESE is the fore-part of the same shield; these two parts are still separated by a *wrinkled* space of skin; 2. the longitudinally folded skin between this shield and the genital aperture; 3. an oval shield, with the blunt top forward, reaching from the genital aperture to nearly the middle of the «venter». This shield is a very genital one.

Fig. 3 shows us the ventral side of the male. There is a distinct sternal-genital and a ventri-anal shield, not, as is delineated and described by BERLESE, one unbroken sternal-genital-ventri-anal shield.

Curious is the fact, that MÉGNIN mentions (Les parasites et les maladies parasitaires, 1880, pag. 115) and delineates (Atlas Pl. 1) the sternal and genital shields, and that BERLESE (1892) denies them!

7. *Liponyssus Klti*.

See about this generic name my *Notes on Acari*, III^d Series, *Tijdschr. d. Ned. Dierk. Vereen.* ser. 2, v. 7 p. 63.

1. *Liponyssus saurorum* Oudms., nov. sp.

See about this species my *Notes on Acari*, III^d Series, *Tijdschr. d. Ned. Dierk. Vereen.*, ser. 2, v. 7, p. 66.

9. *Liponyssus albatrus* (C. L. Koch).

(With Plate 1, fig. 4—8).

BERLESE has not given a drawing and a description of the male, because this was unknown to him. (Ac. Myr. Scorp. Ital. 53, n^o. 6).

Colour and size of the *male* equal to those of the female.

The dorsal shield (Fig. 4) resembles that of the female. The hairs too on this shield and on the soft parts of the dorsum have the same distribution. The marginal hairs however are two times as strong as in the female.

The genital aperture is on the usual place (Fig. 5).

The sternal, genital, ventral and anal shields have coalesced. The part representing the ventral and anal shields is nearly heart-shaped or triangular, with its top turned backward.

The coxae of the 2^d and 4th pair of legs bear a spine turned backward, and the coxa of the 3^d pair of legs two such spines (Fig. 5).

The 4th pair of legs (Fig. 6) bears on its femur two, and on its genu, tibia and tarsus each one strong spine.

The movable finger of the mandibles (Fig. 7) bears a transparent membrane.

BERLESE's figure of the ventral side of the *female* is not correct — or Italian specimens differ from those of Holland.

The sternal shield (Fig. 8) bears *six* hairs in stead of *four*.

Between the sternal and the anal shields all my females show a third shield, not mentioned by BERLESE. I consider this shield, like in *Dermanyssus gallinae* (de Geer), as a very genital shield.

The female's palpi lack on their first article the transparent laminula, observed in *Liponyssus musculi* (C. L. Koch), and therefore, this character not being common to all the species of *Liponyssus*, must be removed from the characters of the genus (vide BERLESE, Ac., Myr., Scorp. Ital 53, n^o. 9).

The coxae are armed perfectly as in the males (vide supra).

10. *Liponyssus corethroproctus* Oudms., nov. sp.

(With Plate 1, fig. 9—14).

Male. Length 450—600 μ . — Colour yellowish white. — The dorsal side (Fig. 9) is protected by a dorsal shield which ends posteriorly in a free blade, which ends itself in four chitinous apophyses, each bearing a strong chitinous spine. Beneath each apophysis there is a second spine, which sometimes is visible next to the apophysis or next to the spine of the latter. Over the dorsal shield are scattered a few regularly and symmetrically arranged little hairs, as shown in my figure. Behind the free blade the soft abdomen bears several strong spines, forming a broom, *κορυθρον*. The abdomen has a median incision.

The ventral side (Fig. 10) is protected by a sterni-genital shield and by a ventri-anal one, the lateral contours of which I could not distinctly discern. This latter shield is flanked too by a hedgehog-like mass of spines, much shorter and more sharply pointed than those of the broom, which of course is visible too, when the animal is seen from the ventral side. It seems to me that the anal shield projects freely beneath the incision of the abdomen. The male's *peritremata* are short; they end forward on a line with the genital aperture.

The legs are normal; the fourth pair bears strong bristles.

The chelae bear a long curved transparent appendage (Fig. 11). I have drawn two chelae, *a*, seen from aside, and *b* seen from above. The fingers have no teeth.

Female. Length 500 to 675 μ . — Colour yellowish-white.

The *dorsal side* is protected by a shield (Fig. 12) over which are spread a few very fine hairs. The soft skin round the shield bears little hairs of the same kind.

The *ventral side* (Fig. 13) shows a sternal shield, exactly resembling that of *Liponyssus albatus* (C. L. Koch). There is a genital shield, the posterior margins of which are rounded and distinct, the anterior, however, are indistinct. Between the sternal and genital shields the skin shows the usual folded appearance. The anal shield is removed from the genital one by a space of its own length. The female's *peritreme* reaches far more forward than the male's; it goes beyond the implantation of the first leg. The remaining of the ventral side is soft and bears numerous fine hairs.

The *chelae* (Fig. 14) have no appendage. The movable finger is yellowish; the other quite transparent.

All the *legs* are normal. The fourth pair has not such strong bristles as in the male.

11. Key to the species of *Liponyssus* Klti.

1. { ♂ with 1, ♀ with 2 dorsal shields .L. *musculi* (C. L. Koch).
 { ♂ and ♀ with 1 dorsal shield2
2. { ♀ sternal shield present3
 { No sternal shield more8
3. { ♀ sternal shield trapezoidal . . .4
 { ♀ sternal shield linear7
4. { end of anal shield cribrated . . .5
 { end of anal shield smooth . . .6
5. { ♂ with spur on femur 3L. *lacertarum* (Cont.)
 { ♂ without spurL. *saurarum* Oudms.
6. { ♂ with broom of bristles around anus.L. *corethroproctus* Oudms.
 { ♂ without broomL. *albatus* (C. L. Koch).
7. only one species.L. *sylviarum* (C. et F.)
8. only one species.L. *uncinatus* (Can.)

N B. A better «key» will, however, be found in the *Tijdschr. der Ned. Dierk. Vereen.*, ser. 2, v 7, p. 68—69 (*Notes on Acari*, IIIrd Series), which has appeared Nov. 30, 1901.

12. Genus *Seiulus* Berlese.

Koch created a genus *Seius* in 1836 (Deu. Crust. Myr. Arachn. 4, 17) with *Seius togatus* as type.

In 1842 the same author choosed his *Seius viduus* as type for the same genus. This is not allowed, but Koch was ignorant of our present Rules of Nomenclature. What this *Seius viduus* is, is not certain. BERLESE believes it is his *Epicrius glaber*. Consequently *Seius* Koch, 1842, is quite another genus as *Seius* Koch, 1836.

In 1881 BERLESE (in Att. R. Ist. Ven. Sc. Lett. Art. (5) VIII, p. 37) created a third genus *Seius* (the genus in question) with *Seius echinatus* Koch as type. As the name *Seius* is preoccupied (see above), the name *Seius* Berl. must be replaced.

In 1887 BERLESE (Ac. Myr. Scorp. Ital 41, 3) proposed the genus (sic!) *Seiulus* for the protonymphae of the species of his *Seius* (Berlese, 1881) Type *Seiulus hirsutigenus* Berl.

I am of the opinion that there is reason enough to adopt the name *Seiulus* Berl., 1887, to replace his genus *Seius* (Berl., 1881) which, according to the Rules of Nomenclature cannot be used, as it is preoccupied.

13. *Seiulus plumosus* Oudms., nov. sp.

(With Plate 1, fig. 15—19 and Plate 2, fig. 20—21).

Protonympha. Length 262 μ . — Colour very pale. — *Dorsal side* (Fig. 15). On the dorsum the six characteristic rows of hairs are present. These hairs have lateral transparent blades, with denticulated edge, which give to the hairs the aspect of *feathers* (Fig. 16).

The *legs* are short and thick.

The *epistoma* is triangular.

Ventral side (Fig. 17). There is a distinct sterni-geniti-ventral shield. The anal shield is small. On the sides of the anal shield there are two hairs of the usual type.

Stigma and *peritrema* wanting.

Deutonympha ♀. A very beautiful creature (Fig. 18). — *Length* 332—402 μ . — *Colour* very pale. — *Dorsal side*. The vertical hairs are leaf-like, the others lanceolate. The hairs on the short and thick legs are feathered for the greater part. The lanceolate hairs differ somewhat in different specimens (Fig. 19). On the level between the 3d and 4th leg there is a transversal row of 8 hairs: in one of my specimens this row has only *six* hairs; no 3 and 6 being absent.

Ventral side. (Fig. 20). There is a distinct sterni-genital shield and a nearly circular ventri-anal one, flanked by two lanceolate hairs. There is behind the first shield already an indication of the large ventri-anal shield of the adult ♀. Two little metasternal shields present. The *peritrema* reaches beyond the first leg. The anus is large.

Adult Female. *Dorsal side* perfectly that of the deutonympha.

Ventral side (Fig. 21). There is a large sterni-genital shield which shows some peculiars: 1stly there is a line running along its foremost margin, 2dly it is posteriorly wider than the distance between the 4th pair of legs, so that a part of the implantations of this pair is situated *under* this shield. 3dly. I don't see any metasternal shields. 4thly the hindmost half of the shield shows a horse-shoe-shaped light-refracting chitinous genital apparatus. The ventrianal shield is large and flanked by two lanceolate hairs; the anus is large.

14. Key to the species of *Seiulus* Berl.

- | | | | |
|--------------------------------|---|---|--------------------------------|
| 1. | { | ♀ with small ventral shield between | |
| genital and anal one | | <i>S. degenerans</i> (Berl.) | |
| | { | ♀ without such | 2 |
| 2. | | ♀ legs 1 thick and with strong claws. | <i>S. unguiculatus</i> (Berl.) |
| | { | ♀ legs 1 as slender as others | 3 |
| 3. | | Dorsum with bristles, or spines, or | |
| | { | feathered, or lanceolate, or spatu- | |
| | | late hairs | 4 |
| | { | Dorsum with usual hairs. | 5 |
| | | | |

4. { Genital and ventri-anal shields re-
mote *S. hirsutus* (C. L. Koch).
Genital and ventri-anal shields tou-
ching *S. plumosus* Oudms.
5. { One long hair on each shoulder,
4 ditto on posterior abdomen *S. vepallidus* (C. L. Koch).
Not such hairs present . . . *S. muricatus* (C. L. Koch).
-

15. *Laelaps* C. L. Koch and *Hypoaspis* Can.

See about these generic names my *Notes on Acari*, IVth Series, *Tijdschr. d. Ned. Dierk. Vereen.* ser. 2, v. 8. p. . . .

16. *Hypoaspis pavidus* C. L. Koch.

This species is somewhat broader than the form called *H. claviger* by BERLESE. The body is more triangular, with rounded edges and rounded corners. The hairs on the body are cultrate, like crooked knives, exactly like those of *H. claviger* Berl. Those on the legs, however, are spines. All the details, both of ♂ and ♀, are the same as in *H. claviger* Berl.

Therefore I consider *H. claviger* Berl. as a simple variety or southern form of *H. pavidus* C. L. Koch.

17. *Hypoaspis cossi* (Ant. Dug.).

(With Plate 2, fig. 22—26).

Synonyms :

1760. *Pou de la chenille du bois de saule*, Lyonet, *Traité anat. chen. bois du saule*, p. 13.

1793. *Läuse auf glatten Raupen*, Kleemann, *Beitr. z. Naturg.* p. 349.

1829. *Pou de la chenille du bois de saule*, Lyonet, in *Mém. Mus.*, 18, p. 277, t. 14 (6), f. 11, 12, 14.

1832. *Pou de la chenille du bois de saule*, Lyonet, *Rech. anat. métam. diff. esp. Ins.* p. 45, t. 6, f. 11, 12, 14.

1834. *Gamasus cossi* Dug. in Ann. Sc. Nat. (2) II, p. 19, 26.

1844. *Gamasus cossi* Gerv. Apt. III, p. 219.

1880. *Gamasus cossi* Haller, Mrlb. Paras. Wirb. p. 28, 33.

1881. *Gamasus cossi* R. Can. in Bull. Soc. Ven. Trent. Sc. Nat. II, I, p. 159.

1882. *Laelaps* sp. Berl. in Bull. Soc. Ent. Ital. 14, p. 350.

NB. Non *Dermanyssus Richardii* Can. et Fanz.!

LYONET has found numerous mites on the caterpillar of *Trypanus cossus* (L.). By the zealous care of Mr. W. DE HAAN of 's-Gravenhage, LYONET's unedited manuscripts were published in 1829 and 1830 in the Mémoires du Muséum d'Histoire Naturelle de Paris, and in 1832 separate in one Volume. LYONET's drawings and descriptions are sufficient to recognize the animal. Though ANT. DUGÈS has named the animal, and though further GERVAIS, HALLER, CANESTRINI and BERLESE mention it, nobody has ever seen it again.

In 1899 I received from Mr. A. A. VAN PELT LECHNER, Burgo-master of Zevenhuizen, near Gouda, an acarus found by him on a caterpillar of *Trypanus cossus* (L.). I believe this animal to be the real *Pou de la chenille du bois de saule* of LYONET. The likeness of LYONET's figure and mine is striking.

A «ligne» = 2166 μ .; LYONET says his animal was «un bon quart de ligne», that is at least 542 μ ., my animal measures 570 μ . Moreover LYONET's description fits too.

KLEEMANN has found mites on caterpillars of *Bombyx Hera*, much smaller than those of naked caterpillars. I think that KLEEMANN saw larvae, or protonymphae, of *Tyroglyphus longior* Gerv. This mite is found under bark of trees, among decaying leaves, in champignons, etc. I consider LYONET's «Pou d'une chenille» (*Gastropacha rubi*) described and figured in Mém. Mus. 19, p. 371, tab. 24, fig. 16, and in his Rech. s. l'anat. et les métam. de diff. esp. d'Insectes, 1832, p. 249, also a larva of *Tyroglyphus longior* Gerv.

KLEEMANN's mites of naked caterpillars may, however, have been *Hypoaspis cossi* (Ant. Dug.) too.

I have found a specimen in May 1900, on *Lacerta agilis* L.

Like a tick the mite's capitulum was concealed under the free border of a scale behind the left leg of the lizard.

Finally my first-cousin, Dr. J. T. OUDEMANS, found in Amsterdam, the 5th of November 1900, a third specimen on a caterpillar of *Saesia formicaeformis*.

CANESTRINI's description of his *Dermanyssus Richardii* don't fit in the least with *Hypoaspis cossi*; probably it is *Hypoaspis krameri*?

Hypoaspis cossi (Ant. Dug.) ♀. The animal (Fig. 22) is oval in shape, and somewhat shouldered. The *dorsum* is scaly and on the posterior margin there are two hairs longer than the other minute ones. The *epistoma* (Fig. 23 and 24) has three cusps; the middle one ends into three teeth, the lateral ones into several. The middle one or the lateral ones may be longer. The *legs* are all about the length of the animal's body. All the tarsi show a distinct division into two joints.

The *sternal shield* (Fig. 25) is normal. The genital shield however is peculiar; it is almost piriform, with the truncated top turned backward. The broad oval fore-piece is very thin and transparent and spreads over the posterior margin of the sternal shield and over the coxae of the 3d and 4th pair of legs. On lowering the tube of the mikroskope we observe that the part of the genital shield (Fig. 26) which is at the same level as the sternal shield, is triangular, scaly, with top forward. The skin before this triangle is striated, like in other *Hypoaspis*. There are two metasternal shields, each bearing a hair.

18. *Hypoaspis hypudaei* Oudms., nov. sp.

(With Plate 2, Fig. 27 and 28.)

Length 448, *breadth* 224 μ .

Colour very pale.

Principal characters: the posterior margin of the geniti-ventral shield is not rounded, but nearly straight. The chitinous rings round the places of implantation on the 2d, 3d and 4th legs project towards

the median line. The body is elongate, twice as long as broad, well shouldered, and bears on its dorsal side about eight longitudinal rows of stiff, sharply pointed hairs. Epistoma rounded.

19. *Hypoaspis krameri* G. et R. Can.

BERLESE suggests (Ordo Mesostigmata, p. 42) that *Hypoaspis krameri* ♂ should belong to his *Hypoaspis campestris*.

It is true that the configuration of body and hairs, and position of the latter would justify such an opinion.

I am, however, in the opportunity to rectify this supposition and to throw more light upon the interesting subject.

I have found on *Oryctes nasicornis* L. deutonymphae, females and males of *H. krameri* G. et R. Can.

It is quite unnecessary to publicate figures of these animals. Seen from above they resemble exactly the figures, given by BERLESE of his *Hypoaspis campestris* (Ac. Myr. Scorp. Ital. 40, 7 fig. 1 and 3). *except that they lack the lateral incision of the dorsal shield!*

Seen from the ventral side they resemble exactly the figures given by BERLESE of *Hypoaspis campestris* (ibidem fig. 2 and 4) *except that the peritreme is long and runs till near the rostrum.*

Further the deutonymphae differ from those of *H. campestris* Berl., by having only *two* long hairs on the posterior margin, in stead of 6 or 8 ones.

Of course the mandibels of the female miss the crooked styliiform appendage of the males.

20. *Hypoaspis celeripediformis* Oudms., nov. sp.

(With Plate 20, fig. 29 and 30).

Length 725; *breadth* 470 μ .

There is no better name for this species than *Laelaps celeripediformis*, for indeed, if I had caught it on a bat, I should at first have believed it to be a *Celeripes* (*Spinturnix*).

I have found only one female.

The *dorsal side* (Fig. 29) shows one dorsal shield with two inner longitudinal rows of setae of different length, two outer longitudinal underbroken rows, and a continuous marginal row. On the posterior margin there are two long hairs. The body itself shows marginal hairs too, of which two long ones stand on its posterior margin.

The *epistoma* is short, sharply pointed.

The *palpi* and the *legs* are very *Celeripes*-like, being short, heavy and provided with stiff bristles. All the legs have enormously developed ambulacra. The tarsi of the second pair moreover end in two spines. The tarsi of the first pair of legs bear two, those of the other legs only one tactile hair. The tarsi of the 2d, 3d and 4th pairs of legs are distinctly divided into two joints.

The *ventral side* (Fig. 30) shows a sternal shield with 6 bristles, an oblong genital shield with two bristles and which becomes inconspicuous forward, a striated part of skin before this shield, and an anal shield. The coxae are all provided with a short chitinous carina, resembling a spine. The venter is provided with setae of different length.

The species is closely allied to *Hypoaspis krameri* G. et R. Can., differs from it by its thick legs.

21. Key to the species of *Hypoaspis* Can.

- | | | | |
|----|---|---|------------------------------|
| 1. | { | 2d leg in both sexes with spurs | .H. hermaphrodita Berl. |
| | { | 2d leg without spurs | .2 |
| 2. | { | ♀ ventral and anal shields fused | .3 |
| | { | ♀ ventral and anal shields separate | .5 |
| 3. | { | Body elongate | .H. holostaspidoides G. Can. |
| | { | Body subcircular | .4 |
| 4. | { | Body without hairs | .H. tumidulus (C. L. Koch). |
| | { | Body with long hairs on margin | .H. placentula Berl. |
| 5. | { | ♀ anal and ventral shields contiguous, | |
| | { | touching with parallel lines | .6 |
| | { | ♀ anal and ventral shields remote | .8 |

- | | | | |
|-----|---|---|-----------------------------------|
| | { | Body round-oval, scarcely shouldered | 7 |
| 6. | { | Body long-oval, well-shouldered | <i>H. arcualis</i> (C. L. Koch). |
| | { | Body without hairs | <i>H. myrmecophilus</i> Berl. |
| 7. | { | Body with marginal hairs | <i>H. canestrinii</i> Berl. |
| | { | Dorsal shield with a lateral incision | 9 |
| 8. | { | Dorsal shield without lateral incision | 10 |
| | { | Body with minute hairs | <i>H. semiscissus</i> Berl. |
| 9. | { | Body with long hairs | <i>H. campestris</i> Berl. |
| | { | Body red, nearly hairless | <i>H. lignicola</i> G. et R. Can. |
| 10. | { | Body brown, yellow, or pale, hairy | 11 |
| | { | Hairs club-shaped | <i>H. cuneifer</i> Michael. |
| 11. | { | Hairs otherwise | 12 |
| | { | Hairs cultrate | 13 |
| 12. | { | Hairs usual | 14 |
| | { | 2d leg in both sexes thicker | <i>H. miles</i> Berl. |
| 13. | { | 2d leg not thicker than 3d and 4th | <i>H. pavidus</i> C. L. Koch. |
| | { | Hairs short | 15 |
| 14. | { | Hairs long | 19 |
| | { | Tarsus 4 with strong spines | <i>H. aculeifer</i> G. Can. |
| 15. | { | Tarsus 4 with hairs | 16 |
| | { | Epistoma with 3 spines | <i>H. cossi</i> (Ant. Dug.) |
| 16. | { | Epistoma rounded | 17 |
| | { | Body long-oval | <i>H. hypudaei</i> Oudms. |
| 17. | { | Body short-oval | 18 |
| | { | Body well shouldered | <i>H. bombicolens</i> G. Can. |
| 18. | { | Body not shouldered | <i>H. oophilus</i> Wasmann. |
| | { | Legs 2 thick | <i>H. krameri</i> G. et R. Can. |
| 19. | { | All the legs thick | <i>H. celeripediformis</i> Oudms. |

22. Genus *Neopodocinum* Oudms., nov. sp.

This genus, created for the species *jaspersi* Oudms., nov. sp., differs from all the other genera of *Laelaptinae*, except *Podocinum* Berl., by having no ambulaera on the 1st pair of legs. It differs from *Podocinum* Berl. by having a robust form and short 1st pair of legs.

23. Key to the genera of Laelaptinae.

See my *Notes on Acari*, IVth series, *Tijdschr. d. Ned. Dierk. Vereen.*, ser. 2, v. 8, p. . . .

24. *Neopodocinum jaspersi* Oudms., nov. sp.

(With Plate 2, fig. 31—33.)

Length 1300, *breadth* 900 μ .

This animal was caught by Mr. J. JASPERS JR. in Amsterdam. I believe, however, that it is a creature of warmer regions, being accidentally brought to our country. It remembers us of tropical forms.

I have only one *female*, which probably is not an adult one, for it has an *Emeus*-like genital shield, and a hair behind the anus, but which certainly is generans, and even a *viviparous* one, for a larva was in it (Fig. 31).

The *dorsal side* (Fig. 31) shows one dorsal shield, the circumference of which is crenulated, bearing a curved stiff bristle in each incision. The surface is smooth, but has some symmetrically arranged, chitinous, slightly elevated markings, one in front, bowed slightly forward, two little ones on the level of the shoulders, bowed slightly backward and bearing a short thick bristle, two on the sides, bent inward and backward, and two long, somewhat undulated, longitudinal ones, looking sideward. These latter show a little chitinous apparatus, within or beneath the dorsal shield, which I think to be a tube and probably an outlet of a gland. The dorsal shield bears four pair of curious hairs; their proximal half is broad, their distal one fine, and the hair itself is noddled suddenly sideways. The other five pair of bristles are of the usual type. The margin of the body is indulated too and the posterior margin bears numerous short bristles curved inward and downward.

The *epistoma* is nearly straight, but bears in the middle a flat lanceolate projection, which I could only see very indistinctly.

The *palpi* are slender and as usual.

The first pair of *legs* is slender; the femur bears two, the genu three club-like small hairs; the genu is thick, swollen; the tarsus has *no claw* and *no sucker*.

The second pair of legs is enormously developed, robust, very chitinous, with very irregular outer and ventral surface of the proximal joints; the tarsus is characterized by having a distinct division in two joints, by bearing 6 short robust spines, and by ending into an *immovable* chitinous apparatus, *resembling* a claw.

The third and fourth pair of legs are tolerably short and slender for such a robust animal. The proximal joints bear small strong spines; the tarsi show a distinct division into two joints, and bear small hairs.

There is a *sternal shield* (Fig. 32), a genital shield and an anal shield; the venter is provided with many distally curved bristles.

The *mandibles* (Fig. 33) are strong and heavy; the fixed finger with one strong canine tooth and a hooked incisor; the movable finger with a cheek tooth, a small canine tooth and a straight incisor.

The *larva* (Fig. 34) shows already the thick 2d pair of legs and the claw-like end of them.

25. *Cyrtolaelaps cervus* (Kram.).

(With Plate 2, fig. 34—36).

BERLESE has described and figured this species in his *Acari, Myr. et Scorp. Ital. fasc. 68 n^o. 8*. The hairs on the dorsal side, however, are not quite correctly drawn. At least on the dorsum of specimens of our country the hairs are distributed otherwise. Therefore I have drawn fig. 34. Further the dorsal shield ends truncated posteriorly. BERLESE delineates it rounded posteriorly.

Fig. 36 represents a *larva*. It does not show a dorsal shield. Hitherto it is not delineated.

Fig. 35 is a *nympha*, probably this is a *deutonympha*. The dorsum has *two* shields; an anterior and a posterior one, separated by a line deeply curved backward. Hitherto it is not figured.

Fig. 34 represents a *nympha*, probably a *tritonympha*. The *adult* is hitherto unknown. *Males* are unknown.

The *epistoma* differs from BERLESE'S drawing too. As will be seen, the epistome of the larva and of both the nymphae is of the same configuration.

The *chelae* are perfectly like those delineated by BERLESE; those of the larva have only smaller teeth.

The larva measures 252, the deutonympha 562, the tritonympha 864 μ .

26. *Cyrtolaelaps nemorensis* (C. L. Koch).

(With Plate 3, fig. 37—42).

Protonympha (Fig. 37). The *two* dorsal shields and the epistoma are perfectly of the same form as those of the tritonympha, figured by BERLESE (Ac. Myr. Scorp. Ital. fasc. 63, n°. 5). The hairs, however; are otherwise and placed perfectly in the same way as in the adult. The posterior dorsal shield is *not* truncated posteriorly.

Deutonympha (Fig. 38). No difference between the form of the dorsal shields, of the epistoma and the distribution of the hairs of this nympha and those of the protonympha.

Tritonympha. Satisfactorily delineated by BERLESE. All my specimens have two small chitinous teeth or prominences in the middle of the epistoma (Fig. 39), which are also distinctly visible on a side-view (Fig. 40), and a posteriorly *truncated* posterior dorsal shield, like *C. cervus*.

That *Cyrtolaelaps nemorensis* (C. L. Koch) is *not* the adult of *Cyrt. cervus* (Kram.), as is suggested by BERLESE (Ac. Myr. Scorp. Ital. p. 58) is sufficiently proved by my drawing 37, 38, 39, 40, but still more by my having found the

Adult form. (Fig. 41 and 42). It is orange-yellow or orange-brown. I believe this is the animal, figured by KOCH. The animal is much larger than the tritonympha, but moreover it has the two dorsal shields, the epistoma and the number and distribution of the hairs perfectly like in the nymphae. The posterior dorsal shield is

truncated posteriorly, like in the tritonympha. The epistoma lacks the two small mucros of the tritonympha.

On the *ventral side* (Fig. 42) the sternal and the genital shields are coalesced. Especially the latter has a peculiar form and circumference. The genital aperture seems to me to be small, triangular, with rounded top turned forward. The demarcation between the sternal shield and the lateral ones is visible between the implantations of the first and second legs. The demarcation between the genital and the ventral shield is very distinct. This latter seems to have coalesced with the lateral ones. The anal shield is very broad, formed like that of the tritonympha.

The protonympha measures 302, the deutonympha 382, the tritonympha 643, the adult female, 1275 μ .

27. *Cyrtolaelaps transisalae* Oudins., nov. sp.

(With plate 3, fig. 43—46).

This species is intermediate to *Cyrtolaelaps cervus* (Kram.) and *Cyrt. nemorensis* (C. L. Koch).

I have found *tritonymphae feminimae*.

Length 644 μ .

The *epistoma* remembers us of that of *Cyrt. nemorensis*, but instead of *two* spines at the base of the two corners of it, the epistoma shows *one* strong spine, which is also distinctly visible at a side-view. (Fig. 43 and 44).

The *dorsal shield* (Fig. 43) is not divided into two, remembers us therefore of that of *Cyrt. cervus* (Kram.), but the incisions do not bent so strong backward as in this species. The dorsal shield is truncated posteriorly, as in both species. — The hairs on the dorsal side are also intermediate between *cervus* and *nemorensis*. In distribution they remember of *nemorensis*, but in having some pair of hairs longer than the others, of *cervus*.

The *ventral side* (Fig. 45) more resembles that of *nemorensis*; the ventral shield extending far more backward. BERLESE's drawing of the ventral side of *C. cervus* is not quite correct: the ventral

shield in this species extends more backward and is truncated posteriorly.

The *chela* is smaller (Fig. 46) than in both the above mentioned species.

28. Key to the species of *Cyrtolaelaps* Berl.

- | | | | |
|----|---|---|-------------------------------------|
| 1. | { | ♀ ventral and anal shields separate .2 | |
| | { | ♀ ventral and anal shields fused .4 | |
| 2. | { | Two distinct dorsal shields . . . | <i>C. nemorensis</i> (C. L. Koch). |
| | { | Dorsal shield with deep lateral incisions | .3 |
| 3. | { | Incisions directed towards each other. | <i>C. transisalae</i> Oudms. |
| | { | Incisions bent towards posterior end of abdomen | <i>C. cervus</i> (Kram.) |
| 4. | { | Ambulacra 1 without membrane . | <i>C. mucronatus</i> G. et R. Can. |
| | { | Ambulacra 1 with membrane . | .5 |
| 5. | { | Dorsal shield posteriorly with 2 horns. | <i>C. cornutus</i> (Kram.) |
| | { | No such horns | .6 |
| 6. | { | Epistoma with 3 spines | <i>C. bisetus</i> (Berl.) |
| | { | Epistoma with 1 spine | .7 |
| 7. | { | ♂ appendage of mandible much longer than mandible | <i>C. spiricornis</i> G. et R. Can. |
| | { | ♂ appendage of mandible scarcely longer than mandible | <i>C. falciger</i> G. et R. Can. |

29. *Pseudoparasitus* Oudms., nov. gen.

(for *Laelaps meridionalis* G. et R. Can.)

In his *Conspectus familiarum* on p. 15 of his work, entitled *Ordo Mesostigmata*, BERLESE divides the families of the *Pteroptidae*, *Dermanyssidae*, *Laelaptidae* and *Gamasidae* into two groups. The first, constituted by the first three families, has: *pedes secundi paris in utroque sexu similes*; the second group including only the *Gamasidae*, has: *pedes secundi paris in maribus validiores quam*

in feminis, inferne calcarati. If we adopt rigorously this distinction — and there is hitherto no reason to deny it — *Iaelaps meridionalis* G. et R. Can. is not a *Iaelaps*, but one of the *Gamasidae* (= *Parasitidae*), and as it differs in some fundamental characteristics from the known species of this family, I propose to create for it a new genus: *Pseudoparasitus* Oudms. (see below).

30. *Euryparasitus* Oudms., nov. gen.

(for *Gamasus terribilis* Michael).

Gamasus terribilis Michael is a very singular member of the family of the *Parasitidae*. Michael has delineated the genital shield of the female wrongly, and therefore we must excuse BERLESE for having ranged this species amongst the very *Parasitus* (*Gamasus*) on p. 64/62 of his work «*Mesostigmata*».

The genital shield of the female of this species is perfectly resembling that of the nymphae iphidiformes of the genus *Iaelaps* (see BERLESE, Ac. Myr. Scorp. Ital. fasc. 40, tab. 8, fig. 9).

I propose for this aberrant species the genus *Euryparasitus* and the following emendation of the tabula on p. 59 of BERLESE'S *Mesostigmata*.

31. Key to the genera of Parasitinae.

- | | | | |
|----|---|--|---------------------|
| 1. | { | Parasites of Vertebrates, therefore
a soft skin, with inconspicuous
shields. | .Haemogamasus Berl. |
| | | Free in moss, decaying leaves, etc.,
well chitinated | .2 |
| 2. | { | ♀ ventral and genital shields fused,
anal shield free. | .Pachylaelaps Berl. |
| | | ♀ ventral and genital shields free. . | .3 |

- | | | | |
|----|---|---|--------------------------------|
| 3. | { | ♀ genital shield almost hexagonal,
anteriorly truncate | .Pseudoparasitus Oudms. |
| | | ♀ genital shield triangular, anteriorly
pointed, fits in a posterior incision
of sternal shield | .Parasitus Latr. |
| | | ♀ genital shield rounded anteriorly,
parallel with posterior margin of
sternal shield | .4 |
| 4. | { | Legs 1 without ambulacra | .Macrocheles Latr. |
| | | Legs 1 with ambulacra | .5 |
| 5. | { | Ono dorsal shield, even in nymphs;
without incisions | .Hydrogamasus Berl. |
| | | Two dorsal shields, or one with deep
incisions | .6 |
| 6. | { | ♂ fingers of chelae subequal | .Cyrtolaelaps Berl. |
| | | ♂ immovable finger minute, movable
altered in formidable knife-like
apparatus. | .Euryparasitus Oudms. |

32. **Pachylaelaps furcifer** Oudms., nov. sp.

33. **Pachylaelaps ensifer** Oudms., nov. sp.

See my Notes on Acari, IX Series, which will appear in this Journal.

34. **Parasitus subterraneus** (Jul. Müller).

(With Plate 3, fig. 47—51.)

Under the name of *Porrhostaspis subterranea*, JULIUS MÜLLER described and figured a species in the Jahresber. d. Mähr Schles. Ges., 1860, p. 176, tab. 3, fig. 2a—2d.

Since that date the animal seems not to have been refound or reobserved by acarologists.

MÜLLER'S description and figure are good enough to recognize the animal at once. Yet I thought it better to give a new description

and to try to draw it better than he did. That MÜLLER did not delineate the two most conspicuous shoulder-hairs, is a result of these being very caduc.

Only the travelling nymph is known to me. The specimens were attached to *Necrophorus vespillo* and *germanicus*. MÜLLER found them on *N. vestigator* and *Geotrupes stercorarius*, but « einzeln und unstät. »

The species is closely allied to *Parasitus (Poecilozhirus) fucorum* (de Geer); yet differs from it by some striking characters.

Length 700 μ . — *Colour* pale, like *P. fucorum*. — *Shape* elliptical. —

Dorsal side (Fig. 47) protected by two shields, the line of demarcation being situated nearly on the middle of the animal's length. The anterior dorsal shield nearly covering the foremost half; the posterior one much smaller, almost triangular, with rounded sides and rounded corners. The anterior shield shows a line, bowed forward, on its hindmost part. All the hairs of the animal are stiff bristles. Those of the anterior dorsal shield are the larger; those of the shoulders the most conspicuous. Those of the posterior dorsal shield are somewhat smaller in size, whilst those on the posterior abdomen are still smaller.

The most remarkable feature of the *ventral side* (Fig. 48) is the sternal shield. Like in *P. fucorum* (de Geer) there is a part of this shield more chitinized and darker coloured than the rest. But this more chitinized part is not a transversal band, but surrounds like a pentagonal frame a light coloured centre. Also the foremost part of the sternal shield is light-coloured.

The *legs* (Fig. 47) are short, strong, spiny; the ambulacral sucker large; therefore the legs resemble those of *Celeripes (Spinturnix)*.

The *epistoma* (Fig. 49) is tridentate; the middle tooth rounded, the lateral ones pointed, broad.

The *hypostoma* (Fig. 50) shows this peculiarity, that the internal maxillar malae are far remote from another, and form with the horns, partly hidden by them, almost pincers.

On examining the creature it immediately strikes us, that each

mandible bears a transparent apophysis (Fig. 47, 50, 51). In this peculiarity the species approaches *P. fucorum* (de Geer) too.

35 and 36. *Parasitus sexclavatus* and *mustelarum* Oudms., nov. sp.

See my *Notes on Acari*, VIIIth and XIth Series, which will appear in the *Tijdschr. d. Ned. Dierk. Vereen.* or in this Journal.

37. *Parasitus vespillonum* Oudms., nov. sp.

(With Plate 3, fig. 52 and 53).

Only the nymph is known to me. I found it on *Necrophorus vespillo* L.

Length 800 μ .

In external features (Fig. 52) it resembles *P. coleopratorum* (L.) deutonympha coleoprata. Yet it is not so chitinized, much paler and deprived of the characteristic twelve rod-like hairs on the two dorsal shields.

The *epistoma* is moreover so characteristic, that the species is at once recognizable from other ones. It is (Fig. 52) quinquedentate; the middle tooth is bottle-shaped; the outer lateral ones gently curved forward and inward; the inner lateral ones very small.

The horns of the *hypostome* (Fig. 53) are partly hidden by the maxillar inner malae. There are two *jugular shields*; the *sternal shield* is normal, with 8 fine hairs.

38. *Parasitus bomborum* Oudms., nov. sp.

(With Plate 3, fig. 54—57).

Of this species only the travelling nymph is known to me. I have found it living free on grass, and Mr. W. J. Klaassen, of Amsterdam, last year procured me several specimens found by him on a *Bombus terrestris*.

The species is allied to *P. fucorum* (de Geer). At first sight it is the same, but there are fundamental differences.

The *dorsal side* (Fig. 54) shows two shields, of which the posterior one is much smaller and more triangular than the anterior one.

The hairs on the posterior dorsal shield are smaller than those of *P. fucorum* (de Geer). The posterior dorsal shield is surrounded by short and stiff bristles.

The *ventral side* (Fig. 55) differs from that of *Parasitus fucorum* (de Geer) by having no dark anterior portion of the sternal shield.

The *epistoma* (Fig. 56) is rounded, there is scarcely a lateral tooth visible.

The *mandibles* lack the singular hyaline apophysis, so characteristic in *P. fucorum* (de Geer).

The *hypostoma* is formed also quite otherwise (Fig. 57). The two horns are at their base covered by a portion of the inner mala, whereas in *P. fucorum* the whole horn is covered by it (N. B. very imperfectly delineated by BERLESE!).

The *legs* resemble those of *P. fucorum* (de Geer).

Length 1050 μ . — *Colour* pale, like *P. fucorum* (de Geer).

39. *Parasitus cornutus* (G. et R. Can.).

(With Plate 4, fig. 58—68).

Larva. *Length* 195 μ . — *Colour* yellow. — *Epistoma* resembling that of the male; distribution of hairs like that of adults; hairs on legs longer and more flexible.

Nympha I — *Length* 360 μ . — *Colour* paler than in the larva. — *Epistoma* normal; hairs on dorsum bristly, remembering strongly of those of the adult, but longer and slightly curved; those of the shoulders elegantly curved forward.

Nympha II. — *Length* 510 μ . — *Colour* pale yellow; animal much resembling *nympha* I.

Nympha III. — *Length* 685 μ . — *Colour* pale yellowish brown. — The animal still more resembles the adult form.

Fig. 58 and 59 represent nymphal epistomata.

The *male* is insufficiently figured by BERLESE (Ac. Myr. Scorp. Ital., fasc. 68, n^o. 3); therefore I have tried to give a better drawing of it. The *shape* of the animal is somewhat piriform, not cylindrical (Fig. 66). The distribution, shape and relative length of the hairs is exactly copied in fig. 66. The surface is scaly, with large scales. The *epistoma* in all my males is bidentate (Fig. 63). The *ventral side* (Fig. 67) shows us two particularities, viz. the right *mandible* bears a thumb-like process, directed forward and inward, whilst the left one has a sharp mucro on its top, directed outward; the mandibles are therefore *asymmetrical*. Further the chitinous *genital apparatus* is *asymmetrical too*; in all my males it is shield-shaped, but oblique, inclining rightward. The horns of the *hypostoma* are uniarticulate, and bear a thumb-like appendage, directed inward and ventrally (Fig. 65). The second pair of *legs* is exactly figured by BERLESE. *Colour* of the male yellowish-brown. *Length* 960 μ .

Female. *Shape* of the body like that of the male. *Colour* the same. *Length* 1020 μ . — *Dorsal side* perfectly that of the male. *Mandibles* symmetrical; horn of the *hypostoma* (Fig. 64) uniarticulate and without the characteristic thumb of the male. *Epistoma* different, bidentate, or with a blunt middle-tooth (Fig. 60—62). The *genital area* (Fig. 68) proves that the species is a true *Parasitus*; the epigynium or female genital shield is triangular, anteriorly pointed and, with the metasternalia, fits in an incision of the sternal shield. But the shape of the chitinous skeleton of the genital apparatus is aberrant and differs from that of all the other *Parasitidae* (Fig. 68).

Both males and females have on their left and right side a gland, the opening of which is drawn in my fig. 66, and situated a little before the line of demarcation between the two dorsal shields. This gland secretes a fluid which coagulates in spirits. (Fig. 66). Probably it has odoriferous properties and serves to repulse enemies.

40. *Parasitus kempersi* Oudms., nov. sp.

(With Plate 4, fig. 69—71).

Of this species I have only two males, caught by Mr. K. J. W. KEMPERS near Nijkerk.

Length 1050 μ .

It remembers strongly of *Parasitus cornutus* (G. et R. Can.) both in habitus and in the armature of the second pair of legs. It differs however, immediately from it, and as far as I know from all the other species of *Parasitus* Latr., by having a *pecten* on the ventral side of the *first* article of the palpi (Fig. 70), and by the total *absence* of a *mentum*.

BERLESE divides the species of this genus into two groups: *Gamasus* (= *Parasitus* Latr.), with *maris corniculi labiales biarticulati*, and *Eugamasus* with *maris corniculi labiales biarticulati*. As is shown by Fig. 70, the species in question belongs to the group *Parasitus*, whilst the species which most resembles it: *Parasitus cornutus* (G. et R. Can.) is an *Eugamasus*.

The dorsal side (Fig. 69) shows many regularly placed bristles of two kinds, viz. small ones and strong ones. The small ones end sharply, the strong ones are rod-like with rounded tops. There are *two* shoulder-bristles of the strong type. Further there are two longitudinal rows of four strong bristles each on the back. One pair stands on the vertex, one pair on the level of the shoulders, one pair more backward but still on the anterior shield, and one pair nearly in the middle of the posterior shield.

Of the second pair of *legs* the femur (Fig. 71) has a peculiar chitinous appendage which is bifid, one of its teeth is very short and truncated and bears a ball; the other is knife-shaped. The genu too bears a bifid and the tibia a single chitinous appendage. Fig. 71 represents the leg viewed from the ventral side.

The *epistoma* (Fig. 69) does not show any spines; it is quite straight. No jugular shields.

41. *Parasitus longulus* (C. L. Koch).

(With Plate 4, fig. 72—79).

Under the name of *Gamasus coarctatus* K. and *Gamasus attenuatus* Koch, BERLESE has delineated and described an Acarus (Ac. Myr. Scorp. Ital. 63, 7), which, according to the Rules of Nomenclature must be called *Parasitus longulus* (C. L. Koch). The length of the animal is given 750 μ . for the male, and 850 μ . for the female. My numerous specimens have these dimensions, but they possess peculiarities which I think important enough to publishate them.

The *female's* epistoma (Fig. 72—74) differs slightly. In most instances the middle spine is the longer, in a few instances the lateral ones. I have not seen an epistoma as BERLESE draws.

The *male's* epistoma is unvariably beautiful, somewhat crown-like (Fig. 75). Its cornicula hypostomatis (Fig. 76 and 77) differ somewhat from BERLESE's figure. Its first article of the palpi has only *one* tubercle (fig. 78), not two, as drawn by BERLESE. This tubercle is enormous, whilst the two of BERLESE's figure are small. Its second leg is much stronger tuberculated (Fig. 79) than that of BERLESE's type, even stronger than BERLESE's variety *minor* (Ac. Myr. Scorp. Ital. 63, 8). The femur has one great, spatulate or thumblike apophysis, and one smaller one, also somewhat thumblike. The genu has one fan-shaped tubercle which forms pincers with the smaller one of the femur. There is still another knob-like tubercle on the genu, which, assisted by a knob-like tubercle of the tibia, forms pincers with the great spatulate apophysis of the femur.

The males show a very fine line between the anterior and posterior dorsal shields; the females don't have such a line, they have only *one* dorsal shield.

42. *Parasitus longulus* (C. L. Koch), var. *robusta* Oudms., nov. var.

(With Plate 4, fig. 80—84).

This form differs from *Parasitus longulus* (C. L. Koch) so slightly, that I consider it only as a variety of it.

Its *length* is both in males and in females varying from 870 to 1050 μ .

The *dorsal sides* don't show any peculiarities, except perhaps that the hairs seem to be somewhat stronger. The hairs on the shoulders as well in the type as in the variety are much stronger than delineated by BERLESE.

On the *ventral side* the *males* do not show any tubercles on the first article of the palps. The 2d leg (Fig. 80) is almost similar to that of the type, except that it is of course much stronger. The *digitus fixus* of the mandibles ends truncated, and has 4 or 5 canine teeth (Fig. 81) of which one sometimes has three points.

The *ventral side* of the *female* (Fig. 82) differs from that of the type delineated by BERLESE, by having two long scuta jugularia, a distinct demarcation between the scuta sternalia and genitalia, an almost triangular operculum genitale, and a 4th femur which has sometimes two tubercles (Fig. 82—84).

 43. *Parasitus dentipes* (C. L. Koch).

(With Plate 4, fig. 85—86).

Koch's *Gamasus dentipes* (Deutschl. Crust. Myr. Arachn. 26. 1.) has a genu and a tibia each provided with an enormous spine; both spines are directed toward the base of the leg: are turned backward. In fig. 85 and 86 I have delineated the 2d leg of the male, seen resp. from above and from below.

G. CANESTRINI's *Gamasus tiberinus*, (called *dentipes* by BERLESE in his Ac. Myr. Scorp. Ital 68. 2), is quite another species. It has a genu with a spine turned *forward* and a tibia with a spine turned *backward*; the two spines forming *pincers*.

44. *Parasitus wasmanni* Oudms., nov. sp

(With Plate 5, fig. 87 and 88).

Only the ♀ is known to me. It is found by Mr. ERIC WASMANN, S. J., in a nest of *Formica sanguinea* Latr., in the neighbourhood of Exaeten near Roermond (Limburg).

Colour brown; *Length* 570 μ .; *stature* strongly remembering that of *Parasitus longulus* (C. L Koch). It differs, however, from it by its epistoma being bidentate and incised between the two cusps, and by the genital shield showing a chitinous armature slightly different from that of *P. longulus*. I have delineated the ♀ in fig. 87 and its genital apparatus in fig. 88.

45. *Parasitus septentrionalis* Oudms., nov. sp.

(With Plate 5, fig. 89—93).

A large species. The male measures 1440, the female 1590 μ . — *Colour* yellowish-brown.

There is only one *dorsal shield*, both in the males and females (Fig. 89). The fore-half has 4 transversal rows of two hairs each and three rows of six hairs each, the hind-half at least six rows of at least ten hairs each.

The *epistoma* of male and female is beautiful, crownlike, with 5 spines. The 1st and 4th *legs* are longer than, the 2d and 3d legs as long as the body. The second leg has a femur with two tubercles on its distal end, a genu with 3 crooked tubercles on its distal end, a tibia with a strongly chitinized spine, curved inward and backward. Fig. 90 and 91 are two 2d legs viewed in different directions. The tarsus is distinctly divided into two joints, a proximal smaller and a distal longer one. The proximal joint is flexed like a knee.

Fig. 92 is the *ventral side* of the *male*, showing cornicula labiales biarticulata.

Fig. 93 is the *ventral side* of the *female*, showing the form of

the genital plate, the distinct demarcation between genital and ventri-anal shields and the distribution of the few hairs.

46. Key to the species of *Parasitus* Latr.

1. { Two distinct dorsal shields2
 { Only one dorsal shield17
2. { Immovable finger of mandible with
 { hyaline apophysis in top3
 { Immovable finger of mandible with-
 { out such4
3. { Sternal shield with broad transverse
 { stronger chitination*P. fucorum* (de Geer).
 { Sternal shield with pentagonal frame
 { of stronger chitination . . . *P. subterraneus* (Jul. Müller).
4. { Post. dorsal shield truncated poste-
 { riorly*P. emarginatus* (C. L. Koch).
 { Post. dorsal shield rounded5
5. { Epistoma with 5 cusps, the middle
 { and the two outer lateral longer
 { than the inner lateral ones. . . *P. vespillonum* Oudms.
 { Epistoma otherwise6
6. { Epistoma with one rounded lobe and a
 { scarcely visible lateral rounded cusp. *P. bomborum* Oudms.
 { Epistoma otherwise7
7. { ♂ horns of hypostoma sessil8
 { ♂ horns of hypostoma pedunculate. 11
8. { ♂ tarsus 2 with a long spur. . . .9
 { ♂ tarsus 2 without spur10
9. { On shoulders and posterior margin of
 { abdomen two subplumose hairs .*P. spinipes* (C. L. Koch).
 { No such hairs*P. magnus* (Kram.)
10. { ♂ femur 2 with long spur and little
 { tubercle*P. furcatus* (G. et R. Can.)
 { ♂ femur 2 with short spur and big
 { tubercle*P. cornutus* (G. et R. Can.)

11. { No mentum? *P. kempersi* Oudms.
 { Mentum present 12
12. { Colour pale 13
 { Colour brown 14
13. { Demarcation between the dorsal
 shields arched hindward . . . *P. rubescens* (G. et R. Can.)
 { Demarcation straight *P. coleoptratorum* (L.)
14. { ♂ femur 2 with spur and little tu-
 bercle 15
 { ♂ femur 2 with two little tubercles 16
15. { Epistoma multidentate; anterior dor-
 sal shield nearly two times as
 long as posterior *P. exilis* (Berl.)
 { Epistoma tridentate; dorsal shields
 almost equal in length . . . *P. longulus* (C. L. Koch).
16. { ♂ genu 2 with spur curved toward
 tibia *P. tiberinus* (G. Can.)
 { ♂ genu 2 with spur curved toward
 femur *P. dentipes* (C. L. Koch).
17. { ♀ ventral shield posteriorly fused
 with dorsal *P. calcaratus* (C. L. Koch).
 { ♀ ventral shield free 18
18. { Epistoma bicuspidate *P. wasmanni* Oudms.
 { Epistoma tricuspidate; *one* dorsal
 shield (see also above sub 15) *P. longulus* (C. L. Koch).
 { Epistoma quinquecuspidate . . . 19
19. { ♂ horn of hypostoma with horizontal
 thorn *P. canestrinii* (Berl.)
 { ♂ horn of hypostoma usual . . . 20
20. { ♂ tibia 2 with enormous spur, or
 otherwise-shaped apophysis di-
 rected towards distal end . . *P. crassipes* (L.)
 { ♂ tibia 2 otherwise 21
21. { ♂ femur 2 with 2 little tubercles . *P. septentrionalis* Oudms.
 { ♂ femur 2 with moderate spatulate
 apophysis *P. meridionalis* (Berl.)
-

47. *Macrocheles longispinosus* (Kram.)

(With Plate 5, fig. 94—96).

BERLESE seems not to have observed the epistoma quite well. His figures in his *Acari, Myr. et Scorp. Ital.*, fasc. 43 no 10 and fasc. 44, no 1, are wrong. I have examined proto-, deuto-, trito-nymphae and adults, and all their epistomata are perfectly of the same outline, varying only slightly. The two limits of these variations are drawn in fig. 94 and 95. All the specimens bear the characteristic 4 slender hairs behind the vertical hairs (in the neck).

The *peritrema* of the protonympha is a very short and crooked tube (Fig. 96).

48. *Macrocheles longulus* (Berl.)

BERLESE (*Ac. Myr. Scorp. Ital.* 43, 9) figures too few clavate hairs on the animal's dorsum; there are much more of them. In the central part and in the posterior half of the dorsum the animal bears moreover 8 smooth hairs, like *Macr. longispinosus* (Kram.). The epistoma is sometimes different from that, figured by BERLESE; the central spine erecting from a horizontal spinous base, not from two bases running obliquely towards this spine. The two mala maxillae interiores diverge as to imitate the bifurcate median spine of the epistoma of other species (*marginatus*, *vagabundus*, etc.).

49. *Macrocheles tridentinus* (G. et R. Can.)

(With Plate 5, fig. 97—103).

The *protonympha*, still undescribed, has two dorsal shields (Fig. 97), and a *peritrema* resembling that of the protonympha of *Macrocheles longispinosus* (Kram.) (vide fig. 96). Its epistoma (Fig. 99) has the usual bifurcate hairy appendage at its top, but the lip on which this appendage is planted is not bifurcate, as in the adult, but only more or less broad and serrated. *Length* 525 μ . All the hairs of the body are hairy in their distal half. (Fig. 98). The anal shield

(Fig. 100) is small, at most three times as long as and as large as the anus itself, oval, with the top turned backward. I cannot discern a sternal shield.

The *deutonympha* undescribed too, measures 700 μ . Dorsally it shows (Fig. 101) *two* shields. All the dorsal hairs are hairy in their distal half (like fig. 98). The shape of the epistoma (Fig. 103) is between that of the protonympha and of the adult. The legs resemble those of the adult; especially the armature of the 4th leg is characteristic that of *M. tridentinus*. The ventral shield (Fig. 102) is not distinct; the anal shield seems to me to be larger than that of the protonympha. The peritremea is perfectly resembling that of the protonympha.

50. *Macrocheles terreus* (Can. et Fanz.).

(With plate 6, fig. 104 and 105)

Of this species I give here two better figures than those of BERLESE (Ac. Myr. Scorp. Ital. 52. 7). Both the distribution of the hairy hairs and the epistoma are quite exactly represented by me, whilst they were hitherto wrongly figured.

When we contemplate this my figure of the epistoma, we unvoluntarily ask whether *Macr. pisentii* Berl. is a nympha heteromorpha of this species, or not.

BERLESE'S figure of the ventral side of the mite is very well done.

As to his figure 2 (*Holostaspis terrestris*), I doubt of this animal's belonging to the species in question. I should consider it as one of the forms of *M. longispinosus* (Kram.).

51. *Macrocheles vagabundus* (Berl.)

(With Plate 6, fig. 106—108).

Female. The female, still undescribed, is of about 980 μ . length and a most beautiful creature; its dorsal skin is marked with fine chitinous areolae, which leave elevations between them, forming

a meshwork (fig. 106). The two vertical hairs are featherlike and short. Behind the vertical hairs there are two light-refracting thick curved hairs, and further there are four segmental rows of eight hairs each, one of six, two of four and one of two hairs.

The *epistoma* (Fig. 108) strongly resembles that of the male. Yet I am doubting of the fact whether the median bifurcate appendage is planted on the base of the fish-tail-shaped lip, or if the lip itself is bifid, like that of *M. marginatus*, *pisentii*, *terreus*, etc.

The second *leg* bears, on the femur a hyalin process, and on the tibia a hyalin *flat* spine (Fig. 106).

On the *ventral side* we observe (Fig. 107) the beautiful markings of the sternal shield, the sub-pentagonal, nearly semicircular genital shield, and an enormous ventri-anal shield, with a perfectly round anus.

52. Key to the species of *Macrocheles* (Latr.)

1. { Epistoma with long spine . . . *M. longulus* (Berl)
 { Epistoma otherwise2
2. { Epistoma with rhomboid lip, ending
 in a long spine. *M. longispinosus* (Kram.)
 { Epistoma with more or less fish-
 tail-shaped lip, with a median
 bifurcate appendage3
3. { Femur 3 with knife-like hair on
 posterior side. Epistoma: lip
 deeply split; each half of fish-
 tail usual. *M. marginatus* (Herm.)
 { Femur 3 without such hair. . . .4
4. { Vertical and body-hairs usual brist-
 les. Epistoma: fish-tail deeply
 split; each half of fish-tail bi-
 furcate *M. pisentii* (Berl.)
 { Vertical and body-hairs for the grea-
 ter part feathered5

5. { Epistoma : fish-tail deeply split ;
each half of fish-tail dentate anteriorly and at its end, nearly bifurcate, resembling that of *pisentii*;
each slip of median bifurcate appendage longitudinally split . . . *M. terreus* (Can. et Fanz.)
Epistoma otherwise 6
6. { Epistoma : each half of fish-tail dentate on end, and anteriorly only
at its base *M. tridentinus* (G. et R. Can.)
Epistoma : each half of fish-tail asusual *M. vagabundus* (Berl.)

53. *Asca affinis* Oudms., nov. sp.

(With Plate 6, fig. 109 and 110).

Asca affinis, of which I found *nymphae* in decaying leaves, and on *Putorius vulgaris* and *P. putorius*, is intermediate between *Asca aphidioides* (L.) and *Asca peltata* (C. L. Koch).

The animal's *length* is 770 μ .; its *dorsal side* (Fig. 109) is, like in the two above mentioned species, scaly, and the anterior dorsal shield a good deal covering the posterior one. The hair on the shoulders and two on the posterior margin of the abdomen are rod-like and distally somewhat hairy. The right and left margins of the posterior dorsal shield are crenulated.

The *sternal shield* reaches beyond the 4th pair of legs, and ends rounded (Fig. 110). The *peritrema* runs till before the 1st pair of legs. The abdomen is truncated posteriorly.

54. *Uropoda tecta* Kram.

(With Plate 6, fig. 111).

Larva. BERLESE (Ac. Myr. Scorp. Ital. 41. 10) wrongly represents the dorsal side of the larva. In stead of *one* dorsal shield the larva bears, behind this, *three* other smaller ones, corresponding more

or less with the three posterior dorsal shields of the *nympha prima* (heteromorpha). I have given in Fig. 111 a sketch of the dorsal side of the larva. The anterior dorsal shield moreover shows beautiful chitinous markings to the right and to the left.

55. *Uropoda ovalis* Kram.

My specimens are large, compared with the Italian; they measure up to 950 μ .

56. *Uropoda krameri* G. Can.

The peritrema of this species does not run «ad corporis marginem recte», as BERLESE states, but, arrived at the margin, *bends toward the base of the 2d leg.*

57. *Cillibaena cassideus* (Herm.)

All my specimens are larger than BERLESE's. The nymphae differ from 784 to 833 μ . in length and from 770 to 784 μ . in width. The adult females are perfectly circular, measuring 896 μ . in the two directions.

58. *Cillibaena minor* Berl.

BERLESE calls this species: *Discopoma cassideus* var. *minor*. I don't believe it a variety of *Cillibaena cassideus* (Herm.) for the following reasons:

1. The shape of the body is oval, with the top forward, measuring 420 μ . in length and 329 μ . width, consequently a proportion of 60 to 47, whilst *cassideus* is perfectly circular.

2. The dorsum is rather hairy, whereas *cassideus* has an almost hairless skin.

3. The margin has only hairs on great distances; that of *cassideus* is regularly provided with numerous minute curved hairs.

4. The posterior third part of the dorsum is covered with many gibbosities, which give to the posterior margin an undulated appearance; no trace of them are discernable in *cassideus*.

5. The nymph of *cassideus* has a broad flattened margin surrounding the body; on 6 places this band is less chitinized, which divides the margin into 6 darker fields; these less chitinized streaks are placed: 1 before the head; 2 behind the anus; 3 and 4, 90 degrees remote from 1 and 2; 5 and 6 just between 1 and 3 and between 1 and 4. Of such a condition there is no trace in the nymphs of *Cillibaena minor*.

58. *Uroseius novus* Oudemans, nov. sp.

(With Plate 6, fig. 112—114).

Only the nymphae pedunculatae are known to me.

Length varying from 770 to 840 μ . There are two different forms of nymphae, smaller and broader ones. I think the broader will be proved to be female, the other male nymphae. I have drawn a specimen of both forms (Fig. 112 and 113).

The *dorsal side* (Fig. 112) is quite polished; very minute hairs are regularly placed on it. Near the posterior end of the abdomen two rod-like hairs project far beyond the margin; they are scarcely feathered on their distal end.

The *ventral side* (Fig. 113) shows us a sterni-genital and a ventri-anal shield, quite polished, each with 8 very minute hairs. Further a pediferous shield with the curious peritrema, and a metapodial one. The anus is marginal and directed backward.

The *legs* are not so long as in *Ur. vegetans* (Jul. Müll.) (= *acuminatus* Berl.); the first pair is slenderer than the others; its ambulacrum provided with sucker and claws, much smaller than those of the other legs.

The *mentum* differs from the common type. Instead of two feathered hairs, it only bears one smooth hair, which is at first trifurcate, whilst its median branch is again bifurcate (Fig. 114).

The species differs consequently from *Uros. vegetans* (Jul. Müll.) 1. by its fore-legs having ambulacra; 2. by its large and singular mentum; 3. by its curiously crooked and irregularly swollen peritrema; 4. by the two rod-like hairs on the posterior end of the abdomen; and 5. by the anus being with round edges (serrated in the other species). These differences are possibly valuable enough to create a new genus.

60. *Caeleno* Berl.

In 1836 C. L. KOCH created a genus *Celaeno*, with *Celaeno spinosa* as type. This animal is only a nymphe of *Pelops acromius* (Herm.), and as the genus *Pelops* was already created some months before, the genus *Celaeno* C. L. Koch, 1836, is synonym to *Pelops* C. L. Koch, 1836.

The genus *Celaeno* contained a few very heterogeneous animals, a. o. *Celaeno aegrotata* C. L. Koch, which animal became the type of the genus *Celaeno* Grube, 1859 (Arch. f. Nat. Liv., Esth.-u. Kurl. ser. 2, v. 1, p. 461 and 473). But the name *Celaeno* is preoccupied by LEACH in 1822.

KRAMER proposed the name *Trachynotus* (Arch. f. Nat., 1876, p. 74) for a genus, with *Tr. pyriformis* Kram. as type. But this is the same animal as *Celaeno aegrotata* C. L. Koch, and *Trachynotus* was already preoccupied by LATREILLE in 1829.

Trachinotus was written by BERLESE in 1881 (Att. R. Ist. Ven. Sc. Lett. Art., ser. 5, v. 8, p. 38); but *Trachinotus* was already preoccupied by CUVIER in 1817.

Finally BERLESE wrote *Caeleno* in 1882 (ibid. p. 17 sep.) which name is not preoccupied and must therefore be adopted.

61. *Rhodacarinae* Oudms, nov. subfam.

This sub-family is the nearest allied to the *Epicriinae* (= *Zerconinae*). The genital aperture of the male is situated in the sternal shield and the female genital split is transverse and situated between

the sternal and the genital shields; further the chelae of both sexes are destitute of appendages.

It differs, however, widely from the *Epicriinae* by the following peculiarities: 1. the genital aperture of the male is approaching the anterior border of the sternal shield in such a way as is quite unknown in the *Uropodinae*, *Antennophorinae* and *Epicriinae*; 2. the body is divided into two distinct regions: a true *thorax* and a true *abdomen*; and this abdomen is movable, like in spiders. The animal is capable of moving it up, down, and sideward, in an angle of nearly 20 degrees.

This last peculiarity characterizes the animal from all the other *Parasitidae*, even from all the known *Acar*i.

By the peculiarities of the genital apparatus the animal takes a situation between the three subfamilies mentioned above and the other subfamilies of *Parasitidae*.

62. Key to the subfamilies of Parasitidae.

- | | | | |
|----|---|--|------------------|
| 1. | { | The genital aperture of the ♂ is a little split between the sternal shield and the mentum . . . | .2 |
| | | The genital aperture of the ♂ is an oval hole in the sternal shield, shut by an oval valvule | .7 |
| 2. | { | One ♀ genital shield | .3 |
| | | Two ♀ genital shields, a right and a left one | .6 |
| 3. | { | The 2d leg much thicker in ♂ than in ♀ and provided with chitinous appendages on femur, genu and tibia | .1. Parasitinae. |
| | | The 2d leg in both sexes equal | .4 |

- | | | |
|-----|---|----------------------|
| | The adults live free and are well
chitinized. | .2. Laelaptinae. |
| 4. | The adults are parasites of Verte-
brates, and are less chitinized or
quite soft. | .5 |
| 5. | Mentum present | .3. Dermanyssinae. |
| | Mentum absent | .4. Spinturnicinae. |
| 6. | Only one subfamily | .5. Caelenopsinae. |
| 7. | The ♂ genital aperture approaches
the anterior border of the sternal
shield | .6. Rhodacarinae. |
| | The ♂ genital aperture between the
3d and 4th pair of coxae | .8 |
| 8. | The ♀ genital aperture is a trans-
verse split between the sternal
and genital shields. | .9 |
| | The ♀ genital aperture is a large,
more or less oval hole in the
sternal shield, shut by an oval
valvule | .10 |
| 9. | The chelae in both sexes destitute
of appendages | .7. Epicriinae. |
| | The chelae in both sexes with ap-
pendages | .8. Antennophorinae. |
| 10. | Only one subfamily | .9. Uropodinae. |

63. *Rhodacarus roseus* Oudms., nov. sp.

(With Plate 6, fig. 115—120).

The name of this species already indicates which effect it made on me, when I examined decaying leaves from a definite spot in the Haarlemmer Hout. Its *colour* is the most brilliant rose, the lightest in the centre of the animal, darker on the sides, whilst the mandibles are of the purest carmine.

The animal is perfectly transparent. It has *no heart*.

Nympha. Length 280 μ . Curious is the disproportionate bulk of the capitulum with the mandibles, which remember the observer of the warrior ants and termites. Moreover the nymph; seen on its dorsal side, resembles, even in the mandibles, the female (Fig. 115 and 119), and on its ventral side the male (Fig. 117), except the total absence of genital aperture. There is an anterior *dorsal* shield covering the thorax, and a posterior one protecting the abdomen. The former shows a distinct line running from shoulder to shoulder, curved backward, as if this thoracal shield were coalesced from two other ones. *Epistoma* and *hypostoma* like in the adult. The *sternal* shield passes beyond the coxae of the 4th pair of legs; it is however broader than in the adult sexes. The *ventri-anal* shield however is perfectly that of the adult.

Male. Length 385 μ . — *Dorsal side* perfectly that of the female (Fig. 115). — *Ventral side* with sternal shield extending beyond the 4th pair of coxae (Fig. 117). One long hair behind the anus; two long hairs on the posterior margin of the abdomen, and two others near this margin, but planted on the posterior dorsal shield. The horns of the *hypostoma* are heavy crooked chitinous bars, bent upwards, around the chelae of the mandibles. The *chelae*, seen from the ventral side (Fig. 118) show a thick thumb-like gibbosity or appendage on the movable finger. This finger is somewhat shorter than the immovable one. Both fingers lack prominent teeth. The *epistoma* (Fig. 120) is better understood by a figure than by a long description; it remembers us of that of *Macrocheles longispinosus*; the median spine is always well-visible, does not seem to be a perfect flat, but a somewhat thickened and light-refracting blade, without any colour. *Mentum* normal. *Peritrema* short, reaching forward till the level between the 2d and 3d coxae.

Female. Length 490 μ . *Dorsal side* quite similar to that of the nymph and the male, described above (Fig. 115). The sternal shield (Fig. 116) is in so far abnormal, as it extends one coxa more backward as usually is the case, for the genital transversal split is situated behind the fourth pair of coxae, consequently in the abdomen, **exactly there where it is situated in spiders**, indeed

a most interesting fact. The genital shield is abnormal too, for it is not rounded anteriorly, but fluted, and in consequence to the hindward situation of the genital aperture, it is very short. The *mandibles* (Fig. 119) are much stronger than those of the male. Fig. 119 and 118 are drawn with the same enlargement. The two fingers of the same mandible cross at their distal ends. The movable one has an incision on its proximal half, ventrally, and further three strong teeth, whilst the immovable finger bears four strong teeth. No flagellum.

Arnhem,
8 April 1901.

A. C. O.